Commonwealth of Kentucky
Division for Air Quality

STATEMENT OF BASIS / SUMMARY

Conditional Major/Synthetic Minor, Construction/Operating
Permit: F-21-014
Roadway Construction Products, Inc.
2555 Brandenburg Road,
Leitchfield, KY 42755
5/4/2021
Walker Reeves, EIT, Reviewer

SOURCE ID:	21-085-00033
AGENCY INTEREST:	1573
ACTIVITY:	APE20210002

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SECTION 1 – SOURCE DESCRIPTION

SIC Code and description: 3441, Fabricated Structural Metal

Single Source Det. ☐ Yes ☒ No If Yes, Affiliated Source AI:

Source-wide Limit ☒ Yes ☐ No If Yes, See Section 4, Table A

28 Source Category ☐ Yes ☒ No If Yes, Category:

County: Grayson
Nonattainment Area ☒ N/A ☐ PM_{10} ☐ $PM_{2.5}$ ☐ CO ☐ NO_X ☐ SO_2 ☐ Ozone ☐ Lead
If yes, list Classification:

PTE* greater than 100 tpy for any criteria air pollutant ☒ Yes ☐ No
If yes, for what pollutant(s)?
☐ PM_{10} ☐ $PM_{2.5}$ ☐ CO ☐ NO_X ☐ SO_2 ☒ VOC

PTE* greater than 250 tpy for any criteria air pollutant ☒ Yes ☐ No
If yes, for what pollutant(s)?
☐ PM_{10} ☐ $PM_{2.5}$ ☐ CO ☐ NO_X ☐ SO_2 ☒ VOC

PTE* greater than 10 tpy for any single hazardous air pollutant (HAP) ☒ Yes ☐ No
If yes, list which pollutant(s): Ethyl Benzene, Polycyclic Organic Matter, Xylenes

PTE* greater than 25 tpy for combined HAP ☒ Yes ☐ No

*PTE does not include self-imposed emission limitations.

Description of Facility:
Roadway Construction Products, Inc. (RCP) is a welding and dipping of highway related products manufacturing facility. RCP manufactures concrete reinforcement baskets for highways and airport runways which may be dipped into paint tanks and drip dried. RCP also produces crash barriers, bridge posts, bridge tubes for guard rails, and break-away sign posts for multi-state DOTs.

SECTION 2 – CURRENT APPLICATION AND EMISSION SUMMARY FORM

Permit Number: F-21-014 Activities: APE20210002

Received: March 3, 2021 Application Complete Date(s): April 22, 2021

Permit Action: ☒ Initial ☐ Renewal ☐ Significant Rev ☐ Minor Rev ☐ Administrative

Construction/Modification Requested? ☒Yes ☐No

Previous 502(b)(10) or Off-Permit Changes incorporated with this permit action ☐Yes ☒No

Description of Action:
The initial permit application for RCP was received on March 3, 2021. RCP is relocating its existing facility (currently permitted under AI 38215) in stages to this new location. Accordingly, RCP has applied to permit the new location prior to the move occurring. After the move is complete, RCP will apply for closure under the old AI. The new facility will have 15 MIG welders, 3 robotic welders, and 3 dip tanks in addition to several rollers, saws, and punch press insignificant activities. RCP has a potential to emit (PTE) over 250 tpy of VOC, over 25 tpy for combined HAPs, and over 10 tpy for some individual HAPs, and has taken a limit of 90 tpy for VOC, 22.5 tpy for combined HAPs, and 9 tpy for individual HAPs to preclude 401 KAR 52:020. Since VOC emissions are in excess of 250 tpy, the limits to preclude major source status and NSR categorize this action as a synthetic minor project.

F-21-014 Emission Summary	
Pollutant	PTE F-21-014 (tpy)
CO	0
NOx	0
PT	0.39
PM_{10}	0.39
$PM_{2.5}$	0.058
SO_2	0
VOC	827.93*
Lead	0
Greenhouse Gases (GHGs)	
Carbon Dioxide	0
Methane	0
Nitrous Oxide	0
CO_2 Equivalent (CO_2e)	0
Hazardous Air Pollutants (HAPs)	
Ethyl Benzene	11.29*
Polycyclic Organic Matter	64.79*
Xylenes (Total)	69.51*
Combined HAPs:	148.00*

*Note: These pollutants are limited by an emission limitation in the permit.

SECTION 3 – EMISSIONS, LIMITATIONS AND BASIS

Emission Unit 001 (A, B, C, D, E, F, G, H, I, J, K, L, M, N, and O): 15 MIG Welders
Emission Unit 003 (R1, R2A, R2B): 3 Robot Welders

Initial Construction Date: 2021

Process Description:
Fabricated metal parts are welded to final product specifications prior to being dip painted. Welding wire includes ER-70S-6 and 90S-D2 for five different manual torch models including Miller CP300, Miller CP302, Invision 352MP, Invision 354MP, Invision 456MP, and ESAB. Robot welders are Miller Auto Excess 450 model and use ER-70S-6 wire.

Maximum Capacities:

- EU001 (A through O): 0.768 lb/hr per welder;
- EU003 (R1): 20.0 lb/hr;
- EU003 (R2A and R2B): 12.5 lb/hr, each

No control devices, but processes are located within the building.

Applicable Regulation:
401 KAR 63:010, *Fugitive emissions*, applies to each apparatus, operation, or road that emits or could emit fugitive emissions not elsewhere subject to an opacity standard within 401 KAR Chapters 50 through 68.

401 KAR 63:002, Section 2(4)(vvvvv), 40 C.F.R. 63.11514 through 63.11523, Tables 1 through 2, Subpart XXXXXX, *National Emission Standards for Hazardous Air Pollutants Area Source Standards for Nine Metal Fabrication and Finishing Source Categories*, applies to each new and existing welding operation that uses materials that contain or have the potential to emit metal fabrication or finishing metal HAP (MFHAP), defined to be materials that contain cadmium, chromium, lead, or nickel in amounts greater than or equal to 0.1 percent by weight (of the metal), and materials that contain manganese in amounts greater than or equal to 1.0 percent by weight (of the metal). An affected source is new if construction or reconstruction commenced on or after April 3, 2008.

Comments:
Emission factors calculated from AP-42 Table 12.19-1 and the MSDS. Processes occur inside facility, so a building control efficiency of 70% is assumed.

Emission Unit 002 (4A, 4B, and 4C): 3 Dip Tanks				
Pollutant	**Emission Limit or Standard**	**Regulatory Basis for Emission Limit or Standard**	**Emission Factor Used and Basis**	**Compliance Method**
Ethyl Benzene	1.95 tons/yr	401 KAR 63:020	*002(4A):* 0.0834 lbs/gal *002(4B):* 0.1361 lbs/gal *Acetone/Mineral Spirit Solvent 002(4A,4B,4C):* 0.0661 lbs/gal each See comments.	Calculation of 12-month rolling emissions, recordkeeping, & reporting.
Polycyclic Organic Matter (POM)	5.50 tons/yr	401 KAR 63:020	1.3761 lbs/gal See comments.	Calculation of 12-month rolling emissions, recordkeeping, & reporting.

Initial Construction Date: 2021

Process Description:
Fabricated metal products are dipped into tanks full of coating and allowed to drip dry. Acetone and mineral spirits are used to clean up waste. Tank 4A contains Quick Drying Asphaltum, Tank 4B contains Steel spec 1014 Red Oxide, and Tank 4C contains Tectyl 506. These dip tanks are located within a 3 sided concrete building with a roof.

Maximum Capacities:
- EU002 (4A): 10.75 gal/hr coating; 0.663 gal/hr acetone/mineral spirits
- EU002 (4B): 11.38 gal/hr coating; 0.663 gal/hr acetone/mineral spirits
- EU002 (4C): 7.5 gal/hr coating; 0.663 gal/hr acetone/mineral spirits

No control devices.

Applicable Regulations:
401 KAR 63:010, *Fugitive emissions*, applies to each apparatus, operation, or road that emits or could emit fugitive emissions not elsewhere subject to an opacity standard within 401 KAR Chapters 50 through 68.

State-Origin Requirements:
401 KAR 63:020, *Potentially hazardous matter or toxic substances*, applies to each affected facility which emits or may emit potentially hazardous matter or toxic substances.

Comments:
Emission factors are based on MSDS. Because this is a dip process, it is assumed there are no particulate emissions. Emission of VOCs from these points are reasonably capturable and thus count toward the potential to emit for the facility despite the applicability of 401 KAR 63:010.

SECTION 3 – EMISSIONS, LIMITATIONS AND BASIS (CONTINUED)

Testing Requirements\Results

Emission Unit(s)	Control Device	Parameter	Regulatory Basis	Frequency	Test Method	Permit Limit	Test Result	Thruput and Operating Parameter(s) Established During Test	Activity Graybar	Date of last Compliance Testing
N/A										

Footnotes: As of permit F-21-014, the permittee has not been required to perform any testing.

SECTION 4 – SOURCE INFORMATION AND REQUIREMENTS

Table A - Group Requirements:

Emission and Operating Limit	Regulation	Emission Unit
90 tpy of VOC emissions	To preclude major source status for VOC under 401 KAR 52:020 & 401 KAR 51:017	Source-wide
9.0 tpy of individual HAP emissions	To preclude major source status for HAP under 401 KAR 52:020	Source-wide
22.5 tpy of combined HAP emissions	To preclude major source status for HAP under 401 KAR 52:020	Source-wide

Table B - Summary of Applicable Regulations:

Applicable Regulations	Emission Unit
401 KAR 63:010, *Fugitive emissions*, applies to each apparatus, operation, or road that emits or could emit fugitive emissions not elsewhere subject to an opacity standard within 401 KAR Chapters 50 through 68.	001(A-O) 002(4A, 4B, 4C) 003(R1, R2A, R2B)
401 KAR 63:020, *Potentially hazardous matter or toxic substances*, applies to each affected facility which emits or may emit potentially hazardous matter or toxic substances.	002(4A, 4B, 4C)
401 KAR 63:002, Section 2(4)(vvvvv), 40 C.F.R. 63.11514 through 63.11523, Tables 1 through 2, Subpart XXXXXX, *National Emission Standards for Hazardous Air Pollutants Area Source Standards for Nine Metal Fabrication and Finishing Source Categories*, applies to each new and existing welding operation that uses materials that contain or have the potential to emit metal fabrication or finishing metal HAP (MFHAP), defined to be materials that contain cadmium, chromium, lead, or nickel in amounts greater than or equal to 0.1 percent by weight (of the metal), and materials that contain manganese in amounts greater than or equal to 1.0 percent by weight (of the metal). An affected source is new if construction or reconstruction commenced on or after April 3, 2008.	001(A-O) 003(R1, R2A, R2B)

Table C - Summary of Precluded Regulations:

Precluded Regulations	Emission Unit
401 KAR 52:020, *Title V permits*, This regulation is applicable to sources required to obtain a Title V permit, including major sources. By taking federally enforceable limits below the major source thresholds, this regulation is precluded and instead 401 KAR 52:030 applies.	Facility-wide
401 KAR 51:017, *Prevention of significant deterioration of air quality*, This regulation is applicable to construction of a new major stationary source. VOC emissions at this facility, while fugitive as defined in 401 KAR 63:010, are reasonably capturable, and therefore must be considered in determining if the facility is a major source. By taking federally enforceable limits below the major source thresholds, this regulation is precluded.	Facility-wide

SECTION 4 – SOURCE INFORMATION AND REQUIREMENTS (CONTINUED)

Table D - Summary of Non-Applicable Regulations:
N/A

Air Toxic Analysis
401 KAR 63:020, *Potentially Hazardous Matter or Toxic Substances*
The Division for Air Quality (Division) has performed AERMOD on April 30, 2021 of potentially hazardous matter or toxic substances (Ethyl benzene, POM, Cobalt, Cumene, Toluene, and Xylenes) that may be emitted by the facility based upon the process rates, material formulations, stack heights and other pertinent information provided by the applicant. Based upon this information, emission limitations were established for POM and ethyl benzene. The Division has determined that the conditions outlined in this permit will assure compliance with the requirements of 401 KAR 63:020.

Single Source Determination
N/A

SECTION 5 – PERMITTING HISTORY

None.

SECTION 6 – PERMIT APPLICATION HISTORY

None.

APPENDIX A – ABBREVIATIONS AND ACRONYMS

AAQS – Ambient Air Quality Standards
BACT – Best Available Control Technology
Btu – British thermal unit
CAM – Compliance Assurance Monitoring
CO – Carbon Monoxide
Division – Kentucky Division for Air Quality
ESP – Electrostatic Precipitator
GHG – Greenhouse Gas
HAP – Hazardous Air Pollutant
HF – Hydrogen Fluoride (Gaseous)
MSDS – Material Safety Data Sheets
mmHg – Millimeter of mercury column height
NAAQS – National Ambient Air Quality Standards
NESHAP – National Emissions Standards for Hazardous Air Pollutants
NO_x – Nitrogen Oxides
NSR – New Source Review
PM – Particulate Matter
PM_{10} – Particulate Matter equal to or smaller than 10 micrometers
$PM_{2.5}$ – Particulate Matter equal to or smaller than 2.5 micrometers
PSD – Prevention of Significant Deterioration
PTE – Potential to Emit
SO_2 – Sulfur Dioxide
TF – Total Fluoride (Particulate & Gaseous)
VOC – Volatile Organic Compounds